Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the matter of Rule Making petition by:	)
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Bryan Broadcasting, Licensee of WTAW, College Station, TX.	)**Media Bureau RM-11836**
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Petition for Rulemaking to Allow the MA3 All-Digital Mode for AM Broadcast Stations	)
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	)
Revitalization of the AM Broadcast Service	)MB Docket No. 13-249

Comments of McCarthy Radio Enterprises, Inc.

1) McCarthy Radio Enterprises, Incorporated ("MRE") and it's principal Michael G. McCarthy, CSRE, CEA hereby respectfully submits it's comments to the Petition for Rulemaking in the above captioned proceeding by Bryan Broadcasting Co. ("BBC"). The notice seeks comments on consideration of and suggestions for proposed modifications of the rules regarding the exclusive use of "digital" emissions for Commission licenses operating in the medium wave band between 530 and 1710 KHz. CFR-47-Part 73 broadcast radio band.

2) MRE is a professional contracting technical services provider to the broadcast industry and it's allied fields based in Chicago, IL. MRE's principal has over 30 years in the field of professional broadcast technical services and allied fields. Mssr. McCarthy is certified by the Society of Broadcast Engineers as a Senior Radio Engineer and Audio Engineer and a member of the Institute of Electrical and Electronics Engineers. He has planned, built, and maintains AM and FM facilities in markets of varying sizes from unrated to major. The comments offered herein are those of Mssr. McCarthy and MRE exclusively and do not in any way reflect, represent, express, or infer the opinions, positions, or preferences of his licensee clients or employers in this matter before the Commission.

General Comments

3) The Commission in the instant matter is responding and acknowledging the time for a tangential change by accepting certain rules and regulations no longer reflect contemporary business, technical, and societal conditions. MRE generally supports and concurs with BBC's argument of permitting digital emission for all licensees to recover from the ever increasing levels of harmful electro-magnetic interference (EMI). MRE believes a licensee should have ultimate decision on which emission to utilize, and concurs a Commission's review of this matter through a comprehensive and formal rule-making proceeding and hearing of comments from industry is warranted and encouraged. Thus rules to be proposed and subsequently adopted in this proceeding need to reflect those contemporary conditions with a forward view of the total band's evolution, licensee rights, and recovery in the increasingly EMI contaminated spectral environment, while maintaining compatibility with select universal operational standards nationwide. Such will be concisely described below.

4) MRE's endorsement of this significant permissible emission modification is not entirely universal however. MRE's opinion is the simple adoption of the as-published and named NRSC "MA3" standard and digital emission as proposed is insufficient. While 5Khz primary emission is a start for digital, such a mask should be considered for analog as well. Moreover, a comprehensive review of a variety of associated rules covering AM emission duty cycle, propagation, far station field allocations, directional pattern design, proofing, and EAS is also necessary beyond just adopting a "simple" mask and permitting a new emission. Still further, simple adoption would give a false promise of swift and simple universal revitalization. Simply adopting the NRSC MA3 standard as suggested is insufficient to permit which would approximate reliable 90/90 analog coverage at their 2mV contour. Such efforts should include more measures to further revitalize and recover the band's total lost coverage from EMI while minimizing risk of increase of interference to far/distant Part 73 co-channel and adjacent channel

licensees. The petitioned rule-making process should include discussion on all of the above and refinement of the mask towards that end.

5) Still further, any proceeding needs to examine the impacts across all stations along with impacts and activities of the band now and into the future. We as a industry have but one chance to "get it right" at this point of the band's evolution. If we as an industry foul up, recovery and correction down the road is that much more difficult if not possible. Industry should avoid the Class A/Clear Channel struggle being fought as part of the ongoing AM band revitalization. The instant proceeding should bear this tall order in mind.

Permissible Digital Emission Technology

6) The instant proceeding should propose to open the market availability in the USA to the use of other technological standards and adopted digital emission schemes already available to and in use by other countries. The present single standard monopoly has in MRE's opinion in-part stalled development and expansion of digital operations, receiver research, and overall market penetration in the USA. MRE believes the receiver marketplace worldwide includes all standards in their receivers, but importers artificially deactivate receivers sent to the USA domestic market for the simple reason the USA is monopolized and the lone system proponent justifiably demands royalties for use of their patented intellectual property. MRE finds this monopoly to be in stark contrast with the Commission's long standing practice to "let the marketplace decide" and consider the adoption of other standards available worldwide by licensees.

7) MRE will not dispute the argument this open market tactic was attempted in the AM stereo wars of the 1980's and the results speak for themselves. A lost enhanced listener experience. While the world generally ignored and didn't adopt AM stereo or it's proposed multiple operating standards then, the world has adopted two digital AM standards today. Both

of which are quite similar. The market should be open for broadcast licensees to adopt either standard without penalty and for the receiver manufactures to choose both, one or the other without penalty. The proposed rulemaking process should discuss this aspect without propriety to one lone system.

Narrowing the Emission Mask

8) MRE agrees and endorses the premise of narrowing the emission mask in general to bring the emission into closer association of the 10KHz channel spacing used in the USA. The bottom line is receiver manufacturers have by-in large designed limited bandwidth of 3-5KHz for several decades. The days of 10 KHz, let alone true wide band 15KHz receivers are a fond distant memory. Regardless of what ever mask is reached by consensus, a mask should be codified with both an analog and digital emission option. This is an important step at permitting stations to increase power where there are no immediate co-channel or 2nd adjacent channel protections. Additionally, the removal of any significant emission past +/-5KHz further improves spectral noise reduction to both 1st and 2nd adjacent channels surrounding the host station. It restores the spectral purity once considered sacred and necessary before the Hybrid adjacent channel solution was implemented with disastrous consequences to adjacent channel stations near and far. The adoption of such a mask by rule will insure a return to that prior "sacred" interference/splash "free" condition and improved overall station coverage.

Propagation and Daytime Allocation Change Challenges

9) At the same time of narrowing the emission mask to even up a true 5KHz channel for digital and optional for analog, an opportunity presents itself to permit stations who adopt such a mask on either digital or analog to receive an opportunity to see their first adjacent groundwave contour permissions increase by some measure, say 6dB. Such increases would allow licensees to increase power to recover lost area to ambient EMI noise presuming there are no co-channel

limitations. Additionally to improve reception, a goal to reach as close to possible 99/99 coverage at the 2mV contour should be considered in this proceeding for during the day where it can be shown far station's coverage is not reduced by the white noise of a digital emission.

Propogation and Nighttime Skywave Change Challenges

10) Unlike the daytime groundwave propagation which is pretty consistent, night time skywave propagation presents some very different operating conditions. Much the same as the Class A arguments of increased night time co-channel noise by reduced skywave protections, the increase of duty cycle noise emitted by digital emission will in effect extend the NIF of a given host station by some distance and increase interference experienced by far stations. The as-filed comments by Experi already claim this to be case. The far station operating in analog will see their NIF free coverage area compress under what will appear to be a varying signal levels of white noise from any number of converted stations invading by skywave. This accomplishes nothing in the long run towards band-noise reduction and revitalization. Particularly on Class C channels which already suffer a great deal of not only harmful, but destructive skywave interference at night. The rulemaking discussion needs to comprehensively discuss this matter on how to reduce night time far NIF noise created by 100% duty cycle digital emissions.

Directional Antenna Coverage

11) It is well known many directional antenna systems have very deep nulls and minimas to create the protections necessary for protecting distant stations. As one drives across these deep minimas, the signal will swish and burble becoming unlistenable for a brief period during transecting of the null. While this isn't that much of a terrible problem for analog, such is or should be a major concern for stations who would operate digitally. Deep nulls and minimas will cause the complete drop-out of program audio in those areas. A question posed should be the minima or null depth permitted for an all digital directional antenna system? Should the depth be

limited to 6db (0.50 field)? 10dB (0.31 field)? What should it be limited to so as to maintain side and/or back-of array coverage at as great a rate as possible as far out as possible. Especially when the nulls are in the community of license. The same question applies to the width of a minima as well. Let NAB and it's partners researching all-digital operations bring this matter to discussion and adopt practical solutions so all listeners can enjoy 99/99 noise free reception while passing through a pattern minima. Especially where a main arterial road or expressway crosses such a null.

EAS AFSK Tone And Voice Message Conveyance

12) Depending on the amount of code compression employed by digital coding and subsequent transmission, the question of downstream decoding of the otherwise pure Emergency Alert System (EAS) AFSK data and 1050Hz tone streams entering a highly compressed system is an open question. Is this an issue? Or is it already proven to not be a problem? Is the NRSC MA3 mask conpressed data stream robust and sufficient to pass these tones without impairment to downstream receiver/decoders as a regional primary carrier? A matter deserving discussion and conclusive evidence in a proper proceeding.

13) Additionally and conversely, would a station revert to analog to send EAS messages? Would this be the case if the station is a monitored PEP, LP-1 or LP2 station and participating stations not convert to the digital reception? Or it is shown the digital emission is insufficient for proper decoding?

14) Could all digital emitting stations embed in their code a continuing test loop of EAS test messaging in multiple languages? While this would require changes in Part 11 and in the digital coding scheme, could it allow continuous testing of the EAS system and non-intrusive forwarding of non-compulsory messages with CAP encoded message payloads?

Spectrum Fee Reduction for Promoting Conversion to All Digital

15) Should the Commission consider reducing the annual Spectrum Fee as an inducement for stations to convert to all digital? Such would help make up for the costs to replace transmission equipment and/or upgrade antenna matching systems? How much and for how long?

Field Measurements

16) As part of the push to all-digital, the matter of how all-digital emission signals would be measured and quantified in the field should be discussed. Would a station being measured revert to analog for field measurements? Or is there a known procedure using existing field measuring test equipment which could be adopted as part of the field proof measuring process. And where the all digital signal is close to the noise floor, how would it be measured? This latter aspect is important for measuring far field stations where consideration is being made for establishing real world operating contours instead of relying on the default M3 conductivity maps and theoretical calculations.

Translators

17) REC Networks filing includes comments which suggest all AM stations converting to digital and have translators procured in Auctions 83, 99, and 100 eventually divest or return those licenses at 5 years. MRE disagrees with such a broad brush stroke. It can not be predicted the amount of time needed for digital radio penetration and saturation to meet critical and commercial mass success. More over, such success, or lack of success will vary by any given geographical or economic area. MRE believes and suggests AM licensees who convert to all digital should be forced by an arbitrary timeline. And for those who do not have a translator, they

should be given first opportunity to acquire and move one to help support their operation during what will be a very challenging conversion period with no set time line to success.

Summary And Conclusion

18) To wit, society's mushrooming and ever worsening spectral noise contamination by Part 15 and Part 18 EMI non-intentional emitting devices wilfully sold and promongulated by unscrupulous business entities is in part forcing AM broadcasters to seek out a new way to reach their listeners under all operating conditions. All-digital emission is but one means to alleviate such a problem. Again, MRE endorses the concept of all digital emission within a 5Khz mask on AM, but with addition consideration to narrowing analog to the same bandwith.

19) But what else can, or should, or must be done by the Commission to encourage this conversion and make this adoption period as short as possible. Would that occur by promoting an open technological standards process? And would that occur by adopting in parallel an analog 5KHz mask along with associated 1st adjacent channel contour improvements to permit power increases where possible in either mode to achieve 99/99 at the 2mV contour? And should the Commission entice licensees to convert to all-digital by reducing annual Spectrum Fees? And mandate all vehicles continue to include AM in their dashboards?

20) Conversely, how could broadcasters and the Commission promote power increases and yet maintain interference free analog coverage of far field analog or digital stations? And how would digital work during night time when skywave more intensely impacts distant station's NIF reception? And how would directional stations fill in deep pattern minimas so reception is not lost behind or to the side of the main lobe within a few kilometers of the transmitter? And how would the Commission promote receiver makers to include universal digital decoding of open standard systems in all receivers effective at a to-be-determined date? And how would EAS be cleanly and reliably distributed through such a compressed data stream?

21) All questions and matters to be best discussed in a comprehensive proceeding leading to realistic and pragmatic all-digital operation on the AM broadcast band nationwide with possible improved legacy analog operation through a meaningful and long enduring set of well vetted adopted rules and regulations.

Respectfully submitted:

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